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## **FUTURE WAR PAPER**

*Title: Using Nonlethal Weapons to  
Complete the Commander's  
Toolbox for fighting Modern Insurgents*

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## **Executive Summary**

**Title:** Using Nonlethal Weapons to Enhance the United States Marine Corps' Ability to Fight Modern Insurgents

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**Thesis:** In order to maximize effectiveness against modern insurgencies, non-lethal weapons must be more fully developed and integrated as a permanent part of United States Marine Corps (USMC) training and doctrine.

**Discussions:** Since the mid-90's, the United States military has made a strong effort to develop nonlethal weapon (NLW) capabilities. However, the military has employed these weapons on a limited basis. Although some types of NLWs have been used for centuries, one of the earliest employments of modern nonlethal weapons was by the United States Marine Corps (USMC) in Somalia during the withdrawal of peacekeeping forces in 1995. Because the Somali factions caught wind of the Marine Corps' intended use of these weapons, they opted not to interfere with the withdrawal of forces. Even though NLWs were not truly tested, the experience galvanized efforts to further develop nonlethal capabilities.

Since that time concentrated efforts have been made to develop nonlethal capabilities which has included designation of the Commandant of the Marine Corps as the executive agent for the Department of Defense for the development and testing of NLWs. However, employment of these weapons has been mostly used for riot control purposes. Use of NLWs in Iraq against insurgents has been limited. Military experts and the media continue to argue that the United States military needs to do a better job of gaining the support of the people in its efforts to defeat insurgency in Iraq. Use of conventional weaponry can act as a deterrent to improving these efforts due to its killing of innocent bystanders and destruction of personal property and existing infrastructure. NLWs are not a cure-all to problems associated with gaining support of the local populace, but they can assist in solving the problem.

There are many issues with the employment of NLWs. The most critical issues deal with possible side effects and the possible inhumanity of NLWs. As NLW technology is developed and improved, both of these issues are minimized and in some cases fully eliminated. By carefully choosing which of these weapons to employ, the USMC could mitigate some of the problems associated with modern insurgency, gain support of the population, minimize damage to personal property and existing infrastructure, and at the same time eliminate hostile insurgents.

**Recommendation:** In order to maximize the operational advantage provided by NLWs, the USMC should embrace the use of these weapons. This will involve integrating the proper NLW capabilities as a permanent part of the force structure. Most of the current doctrine and technology is aimed at crowd and riot control, which have limited use in fighting modern insurgents. In order to improve its capacity to fight modern insurgents, the USMC should fully integrate current nonlethal technologies into its doctrine and training methodologies.

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## **The Need for NLWs in Counterinsurgency Operations**

There is a need for incorporation of non-lethal weapons (NLWs) employment into current United States Marine Corps (USMC) counterinsurgency (COIN) doctrine and training. In the future, the USMC could possibly engage in COIN operations in almost any situation. These situations could include conventional warfare that leads to COIN operations as in Operation Iraqi Freedom, or as in the USMC's involvement in small wars in Nicaragua and Cuba during the early 20<sup>th</sup> century. No matter how COIN situations occur, each situation will be a complex problem that requires a different solution than the last counter-insurgency effort. The recent publishing of "A Tentative Manual for Countering Irregular Threats: An Updated Approach to Counterinsurgency" on 14 June 2006 emphasized the need for Marines to not just be able to fight conventionally, but that Marines need to take a holistic approach to warfare.<sup>1</sup> This holistic approach emphasizes gaining support of the local populace and knowing when to fight with weapons and which weapons to use. Current Marine Corps Doctrine does not emphasize the complementary employment of NLWs and lethal weapons that is needed to range the wide spectrum of force application necessary to be successful against modern insurgencies. In order to maximize effectiveness against modern insurgencies, NLWs must be better developed and integrated as a permanent part of USMC training and doctrine.

### **A Background on Modern Insurgents**

Modern insurgents use irregular tactics that range from information operations to guerilla warfare in an urban environment. These tactics include blending in with and using the local populace to gain credibility and further insurgency efforts. Countering these tactics is difficult. One of the most important principles in counter-insurgency operations is gaining support of the

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<sup>1</sup> United States Marine Corps. *Countering Irregular Threats: A Comprehensive Approach*. 14 June 2006. 4.

local populace. Killing innocent civilians and destroying local infrastructure with conventional weapons does not gain the support of the local populace.

Classical insurgencies (such as during the Vietnam War) tend to focus on seeking cover and concealment in rural areas while using urban terrain as only a supporting effort. Operating in a rural environment allows the Marine Corps to fully employ its advanced weaponry and equipment. However, modern insurgents “operating in urbanized societies (like Iraq) or countries with under-populated mountains, deserts and forests (like Afghanistan), the cover is in the cities.”<sup>2</sup> Operating in an urban environment gives the advantage to the insurgent because damage to personal property and existing infrastructure (whether insurgents or counter-insurgents cause the damage) turns the local populace against counter-insurgency efforts.

### **The Need for NLWs in COIN**

Department of Defense Directive (DODD) 3000.3, Policy for Nonlethal Weapons, 9 July 1996, defines NLW as “weapons that are explicitly designed and primarily employed so as to incapacitate personnel or materiel while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment.”<sup>3</sup> NLW employment may be part of the answer to minimizing collateral damage, while also allowing Marines to apply the force necessary to be successful against modern insurgents. An article entitled “Lack of Non-lethal Weapons Capabilities Hindering U.S. Efforts in Postwar Iraq; Experts Urge Department of Defense to Increase Spending Seven-Fold” published by the Council on Foreign Relations contends that occupying forces could have better restrained runaway looting and sabotage, while offering occupying forces a better means of protecting themselves without a high risk of killing

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<sup>2</sup> Kilkullen, David, “Counterinsurgency Redux” Survival Vol. 48, Number 4. Dec 2006. 111-130.

<sup>3</sup> Department of Defense. *Department of Defense Directive 3000.3: Policy for Nonlethal Weapons*. 9 July 1996. 1.

innocent Iraqis, if more NLWs had been available immediately upon commencement of “Phase 4” operations in Iraq.<sup>4</sup>

Operational solutions for counter-insurgency require that commanders have a complete toolbox that allows force application appropriate to each situation. NLWs deter and incapacitate the enemy without killing non-combatants, and minimize collateral damage. However, NLWs are just one tool and plans for their employment will need to include conventional weapons in order to develop a complete continuum of force that allows successful counter-insurgency operations. Conventional weapons and NLWs must complement each other, enabling a commander to cover the full spectrum of force application when dealing with modern insurgents. Figure 1 demonstrates the force continuum that can be applied to counter-insurgency operations by operational commanders.

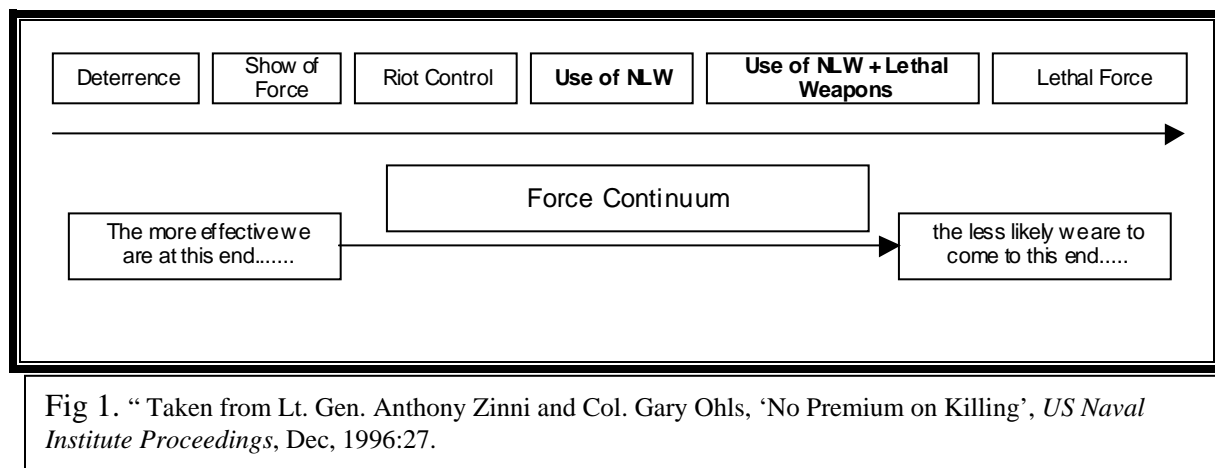


Fig 1. “ Taken from Lt. Gen. Anthony Zinni and Col. Gary Ohls, ‘No Premium on Killing’, *US Naval Institute Proceedings*, Dec, 1996:27.

The elimination of options four and five in the force continuum (Use of NLW and Use of NLW + Lethal Weapons see Fig. 1) creates a capability gap. Unfortunately, in most cases the USMC currently conducts COIN operations with the previously stated capability gap. The lack of NLWs as an employment option can lead to application of lethal force when it is not

<sup>4</sup> Council on Foreign Relations. “Lack of Nonlethal Weapons Capabilities Hindering U.S. Efforts in Postwar Iraq; Experts Urge Department of Defense to Increase Spending Seven-Fold” Online posting. 26 February 2004.

necessary, which can lead to unnecessary force escalation and ultimately damage counter-insurgency efforts.

### **Directed Energy Weapons in COIN Operations**

There are many different types of modern NLWs. Some have been in existence for decades while others are still being developed. This paper will use directed energy weapons as an example for conceptualizing the possible. Directed energy (DE) weapons currently under development will provide commanders and operational planners with the ability to deter and incapacitate combatants and non-combatants, which could ultimately bridge the gap in the force continuum between lethality and non-lethality of conventional weapons. The Joint Non-lethal Weapons Directorate (JNLWD), which is primarily responsible for the development of NLW technology for the Department of Defense, has an eventual goal of developing a hand-held directed energy weapon that has the ability to stun or kill a human being, which will combine a lethal and non-lethal capability into one weapon system.<sup>5</sup> As the executive agent for the development of NLWs through the JNLWD, the Commandant of the Marine Corps will be in position to ensure that the Marine Corps fully integrates NLW technology into its training and doctrine. Appropriate employment of directed energy weapons by the USMC will enable the Marine forces to have an edge in the asymmetric warfare associated with modern insurgencies.

Directed energy weapons currently being developed include millimeter wave weapons and laser dazzlers that achieve the effect of deterrence or denial, while future directed energy weapons will have a stun or kill capability. One of the current directed energy weapons is the Active-Denial System (ADS)(See Figure 2). ADS is a counter-personnel, non-lethal directed energy weapon that projects a focused beam of millimeter waves to induce an intolerable heating

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<sup>5</sup> Aycock, Lieutenant Commander Cabot (Educations Officer, Joint Non-lethal Weapons Directorate). Personal Interview. 26 September 2006.

sensation on an adversary's skin, repelling an individual without causing injury.<sup>6</sup> This system is being tested on a HMMWV mounted frame, a crew-served tripod system, and a hand-held system. This system's primary use is as a deterrent. It can be used to deny a combatant access to a specific area or control a combatant's movement. Most of the research has been conducted to understand effects of the weapon and ensure a wide safety margin exists between operationally useful levels of effects and those that may cause injury. "Age, sex, and size do not matter; the effect of ADS is consistently the same from person to person."<sup>7</sup> More importantly, employment of ADS in testing has produced no adverse effects. Out of 10,000 humans exposed to ADS during testing, none experienced adverse effects.<sup>8</sup> ADS has direct application in fighting modern insurgents, and offers an alternative to the use of potentially lethal, conventional weapons as a deterrent. The effects of ADS only last while the energy is being directed at the combatant. The combatant will become effective once he is out of the energy beam's path, so it's incapacitation time is limited.

The ADS system complies with International Law of Armed Conflict, meets all treaty requirements, and U.S. Central Command JAG concurred that ADS System 1 is employable under current Rules of Engagement in Iraq.<sup>9</sup> The legal and treaty review process is necessary to ensure that any weapon meets the requirements of existing treaties and international law. This is important because many commanders are hesitant to view NLWs as a viable weapon due to possible legal ramifications. The JNLWD ensures that all NLWs under development go through

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<sup>6</sup> Joint Non-lethal Weapons Program Website. Active Denial System Fact Sheet. (Cited throughout the month of December 2006) <https://www.jnlwp.com>.

<sup>7</sup> Aycock, Lieutenant Commander Cabot (Educations Officer, Joint Non-lethal Weapons Directorate). Personal Interview. 26 September 2006.

<sup>8</sup> Aycock, Lieutenant Commander Cabot (Educations Officer, Joint Non-lethal Weapons Directorate). Personal Interview. 26 September 2006.

<sup>9</sup> Joint Non-lethal Weapons Program Website. Active Denial System Fact Sheet. (Cited throughout the month of December 2006) <http://www.jnlwp.com>.

the legal and treaty review process that will allow NLWs to be employed without legal concerns. While ADS has met legal requirements, it is still not being employed except in tests, and has not been funded or validated in the Program of Objective Memorandum for the USMC, which is a key indicator that ADS has not been identified as a weapon that the USMC desires to purchase, employ, and train with in the near future.



Fig 2. Active Denial System (ADS) mounted on a HMMWV. Photo Courtesy of Joint Nonlethal Weapons Directorate.

While ADS represents current DE technology, there are other systems that are not as close to being ready for fielding as ADS. One such system is the Personnel Halting and Stimulation Response (PHaSR) (See Figure 3). PHaSR is a rifle sized counter- personnel non-lethal weapon system that synergistically applies two non-lethal laser wavelengths that will deter, prevent, or mitigate an adversary's effectiveness.<sup>10</sup> This is a hand-held system that can be shoulder fired or bipod fired. The laser light from PHaSR temporarily impairs combatants by “dazzling” them with one wavelength. The second wavelength causes a repel effect that

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<sup>10</sup> Joint Non-lethal Weapons Program Website. PHaSR Fact Sheet. (Cited throughout the month of December 2006) <http://www.jnlwp.com>.

discourages advancing aggressors. Similar to ADS, PHaSR has direct application in fighting modern insurgents, but it also assists in bridging the gap between the use of conventional weapons and firing warning shots with conventional weapons.

ADS and PHaSR provide the USMC with current and near-term options for NLW employment against modern insurgents. Current research and development of energy directed weapons is aimed at producing a “stun gun” capable of incapacitating a combatant for different lengths of time. The ultimate goal of the PHaSR project is to eventually produce an actual “stun gun”, where as the current system is more of a deterrent or denial type system. Eventually the “stun gun” will have a selector lever that controls the intensity of the directed energy with settings that range from deter to stun to kill.<sup>11</sup> This weapon system once developed could be employed to temporarily incapacitate combatants while decisions are made in regards to what to do with the combatant.



Fig 3. Personnel Halting and Stimulation Response (PHaSR). Photo Courtesy of Joint Nonlethal Weapons Directorate.

### **Understanding Second Order Effects**

Employment of ADS, PHaSR, and even a future stun gun will provide operational commanders with another tool that may be used in developing operational plans that will enable

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<sup>11</sup> Aycock, Lieutenant Commander Cabot (Educations Officer, Joint Non-lethal Weapons Directorate). Personal Interview. 26 September 2006.

success in the COIN fight. In order to ensure success, possible second order effects of NLWs must be considered prior to their employment. Because NLWs can be used against combatants and noncombatants, NLW can be employed in most situations during COIN operations. Overuse or improper use of NLWs could lead to a second order effect of unwanted escalation in violence. Knowing how different populations will react to NLWs may be next to impossible to predict. In order to have any success at prediction of a population's possible reaction to NLW employment, operational planners and commanders will be required to have an extensive understanding of each population's culture.

Other second order effects include the requirement to plan for dealing with combatants that are incapacitated. A decision must be made to deal with incapacitated combatants immediately or to capture and define responsibility for handling detainees. Other second order effects include insurgents' reactions to not being killed. The possibility of insurgents losing their fear of Marines does exist, but this leads back to the force continuum discussions that require NLW employment to be combined with employment of conventional weapons. Even a good understanding of second order effects will require commanders and operational planners to develop ROE that are specific to the type of insurgent, type of environment, desired effects, numbers of noncombatants, and mission.

### **Developing NLW Doctrine and Training Standards**

While there is no way of ensuring that commanders will know all possible effects associated with NLWs and ROE will never cover every possible situation that could occur when operating against modern insurgents, increasing frequency and quality of NLW training will assist in gaining the confidence of commanders and planners in the capabilities of NLWs. The first step in establishing guidance for training is to establish employment criteria and methodologies into COIN doctrine. The most current doctrine for Marine Corps COIN is found

in the final draft version of the FMFM 3-24/FM 3-24 (*Counter Insurgency Operations*) dated June 2006, which was written in cooperation with the United States Army. NLWs are mentioned once in the manual. The following is the only excerpt from the manual that mentions NLWs:

“By utilizing more streamlined materiel procurement procedures, COIN forces can benefit from closer to real-time satisfaction of previously unforeseen needs generated by specific and localized environmental and cultural conditions. Examples of COIN requirements that fit into these categories for COTS are—

- Public address system
- Language translation devices.
- **Nonlethal weapons.**
- Backpack drinking water systems.
- “Gator” mobility systems.”<sup>12</sup>

In the above excerpt, COTS refers to “commercial off the shelf ” items procured from contractors, which shows the current plan for procurement and fielding of NLWs into the operating forces. The passage provides no specific guidance for NLW employment in COIN.

One possibility that the Marine Corps could use for developing NLW employment in COIN is to use the doctrine of a country that has as much or more experience in COIN. One country that has doctrine and experience in COIN is Great Britain. The British have incorporated NLW employment into their COIN doctrine. British Army Field Manual Volume 1, Combined Arms Operation, Part 10 is entitled “Counter Insurgency Operations (Strategic and Operational Guidelines)” contains operational guidance for NLW employment in COIN operations. This British manual outlines NLW doctrine in COIN to include: background on the need for NLW employment in COIN, categories of NLWs and their uses, advantages and disadvantages associated with employing NLWs in COIN, and specific employment guidance. Specifically, the manual provides guidance on employment of DE weapons in COIN. However, the overall advantage of the manual is that it provides doctrine for operational planning of NLW employment in COIN.

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<sup>12</sup> United States Army and United States Marine Corps. FM 23-4/FMFM 23-4: *Counterinsurgency*. Final Draft June 2006. 8-7.

While the Marine Corps does not have doctrine that addresses operational considerations for NLW employment in COIN, it does possess doctrine that addresses tactical employment of NLWs. MCWP 3-15.8 is titled *Tactical Employment of Nonlethal Weapons* and is a multi-service publication signed by all branches of the service, including the U.S. Coast Guard, published on January 15, 2003. The scope of the document is as follows:

“This publication describes multi-Service tactics, techniques, and procedures (MTTP) for consideration and use during the tactical employment of nonlethal weapons (NLW) in support of warfighting personnel conducting training and tactical operations. This publication—

- a. Provides an overview of NLW and its relationship to deadly force.
- b. Provides NLW system description.
- c. Describes the capability requirements of NLW.
- d. Discusses fundamental concepts and training requirements involved with NLW.
- e. Discusses the tactical employment considerations of NLW.
- f. Discusses lessons learned from previous NLW use.”<sup>13</sup>

While the publication does an excellent job of providing information regarding the items listed above, it fails to discuss operational considerations for employment of NLWs in COIN, and employment of directed energy weapons. In most accounts, MCWP 3-15.8 is focused on planning, employment, training and types of NLWs associated with crowd control. Even the sample training schedules focus on crowd control. The historical examples provided in the MCWP 3-15.8 are also related to crowd control and peace enforcement. While the publication is well written, the Marine Corps needs doctrine that provides operational planning and employment guidance for NLWs in COIN. This doctrine needs updating to include employment of directed energy weapons and other NLWs that are employed in operations other than crowd control. Once this doctrine is updated, then tactical level training doctrine and training standards that include employment of NLWs in COIN are needed to provide tactical application of NLWs in COIN.

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<sup>13</sup> United States Marine Corps. MCWP 3-15.8 *MTTP for Tactical Employment of Nonlethal Weapons (NLW)*. 15 January 2003. i.

MCWP 3-15.8 does provide guidance on tactical training with NLWs, which is critical in ensuring that the USMC can execute tactical missions that assist in achieving operational goals.

The fundamental concept of the training paragraph in the MCWP 3-15.8 states the following:

“The successful accomplishment of any operation in which nonlethal measures are employed requires extensive preparation, of which individual, unit, medical support, and unit training are vital parts. Training should be designed to give individuals an understanding of the entire subject area and enable them to function efficiently as members of a unit. This training must be intensive and realistic. Training with the NLW capability set, and other NLW, is critical to employ these weapons with confidence. The training flow should be—train leaders, train instructors, train unit, exercise. Qualified instructors should conduct initial unit training. Unit sustainment training should be conducted per individual service and unit requirements.”<sup>14</sup>

The “train instructors” portion of the training flow mentioned above is provided by the Interservice Nonlethal Individual Weapons Instructor Course (INIWIC), which is an interservice school managed by the Marine Corps Detachment at Ft. Leonard Wood, Missouri. While all four services compete for seats to the school, the Marine Corps does gain a certain amount of certified NLW instructors each year. However, in most cases, units miss the “train leaders, train unit, and exercise” portion of the training flow. If leaders are not trained in NLWs and units do not train and conduct exercises, commanders will not have confidence in using NLWs as an employment option especially in the dangerous world of COIN.

One of the first steps toward rectifying the lack of training and exercises would be incorporation of NLW training standards into the Infantry Training and Readiness (T&R) Manual. “The training events in the Infantry T&R are used to standardize unit training throughout the community, focus on Mission Essential Tasks for the community, and establish a framework for assessment of unit and individual training readiness.”<sup>15</sup> The current Infantry T&R was signed on 1 September 2005 and mentions NLW employment in two events. The

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<sup>14</sup> United States Marine Corps. *MTTP for Tactical Employment of Nonlethal Weapons (NLW)*. 15 January 2003. IV-1.

<sup>15</sup> Department of the Navy. *NAVMC Directive 3500.87, Infantry Training and Readiness Manual*. 1 September 2005. 1.

Infantry T&R manual requires Marine infantry companies and platoons to sustain civil disturbance training every six months. This training includes employment of NLWs with a caveat written in parentheses in the component event of “when available” referring to the availability of NLWs.

In the company and platoon sustainment section of the Infantry T&R Manual, there are no individual training standards for NLW employment. Another problem is that the events in which NLWs are mentioned in the T&R Manual are focused only on civil disturbances, leaving out COIN and other operations where NLWs can be employed. Also, the only reference mentioned in each of the events is the FM 3-07 *Support and Stability Operations*. This leaves out the MCWP 3-15.8 and the only standard based training document available for NLW employment, “Individual Training Standard (ITS) System for Nonlethal Weapons” (Marine Corps Order 1510.112). This document is dated 27 May 1998 and provides training standards for the INIWIC. The ITS System for NLWS is one of the references on which the MCWP 3-15.8 is based.

While the ITS System for NLWS does provide a basis for training with NLWs, it fails to tie the standards to training evaluation events and mission essential task lists that commanders can use as a basis for unit training and exercises. While infantry units are required to execute training events found within the Infantry T&R Manual, they are not required to sustain the standards found in the ITS System for NLWs. Another point is that the ITS System for NLWs is also focused on riot control and much like the MCWP 3-15.8 fails to incorporate directed energy weapons and NLW employment in COIN. These ITSs need to be updated to incorporate current NLW technology so that all units can use them as a basis for training, and then the Infantry T&R Manual needs to be revised to include training events and embedded ITSs that will provide infantry commanders with evaluation standards that are required to be met in execution of

Training and Readiness evaluations and training exercises. The training events and ITSs should include directed energy weapons and integration of NLWs in COIN. In addition, the creation of ITSs will create justification for adding NLWs to Tables of Organization and for adding NLW ammunition to an infantry unit's annual ammunition allocation.

After training and evaluating their units in accordance with developed doctrine and T&R Standards, Marine commanders will need training opportunities that assimilate real life situations that Marines will encounter in COIN operations. These situations should provide opportunities for Marine leaders to follow the Rules of Engagement (ROE) and enact the thought process of employing NLWs such as ADS and PHaSR. By utilizing the NLWs against humans playing modern insurgents within the parameters of a scenario, Marine leaders could observe effects and gain confidence with NLW capabilities. More importantly, the scenario would give the Marines real life experience with the weapons prior to using them in COIN operations. Existing exercises like Mojave Viper conducted at Marine Corps Air Ground Combat Center in 29 Palms, CA. Mojave Viper is a 30-day training exercise that trains Marine Ground Air Task Forces in command, control, and coordination of kinetic and non-kinetic fires using facilities, role players, and scenarios that closely replicate the environment to which they will deploy, to include simulated COIN scenarios<sup>16</sup>. If Marine units participating in Mojave Viper had directed energy weapons and other current NLWs, they could use these weapons and thus gain the experience necessary to successfully employ modern NLWs against modern insurgents.

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<sup>16</sup> Benchmark Communications, Edited by Public Affairs Office 29 Palms, CA. *29Palms Marine Corps Air Ground Combat Center Installation Guide: Mission and Major Units*. 12 December 2006. <http://militarynewcomers.com/29PALMS04/RESOURCES/Mission.html>.

## **Fielding NLWs in the Marine Infantry Battalion**

The final requirement for ensuring that units are prepared to employ NLWs in COIN is ensuring that infantry battalions have the necessary equipment to train prior to arriving in a real world COIN. The table of organization and equipment does not include NLWs nor does the annual ammunition allocation include NLW ammunition that can be fired with organic weapons systems such as the 40mm rubber ball cartridge fired by the M203 grenade launcher. The only way for a USMC unit to obtain NLW equipment and ammunition is to purchase the USMC NLW Capability set, which comes as a package that includes equipment and ammunition.<sup>17</sup> The JNLWD is in the process of instituting a system that will allow units to purchase only the portion of the capability set that the unit needs. This capability set is focused on crowd control and matches current NLW ITSs and tactical doctrine found in the MCWP 3-15.8.

However, the key word in the aforementioned is “purchase”. Units currently are not given an annual allocation of NLW ammunition nor do they possess current NLWs, such as directed energy weapons on their table of organization and equipment. When an infantry unit wants to conduct live fire or non-live fire training with organic weapons, they draw the necessary weapons out of the armory and ensure that the required ammunition is requested in an appropriate manner. If an infantry company wants to train with NLWs, the company will need to obtain a company-sized capability set enabling 200 Marines to train for approximately \$121,000 per set. If money is not available within the battalion, regiment, or division operational funds to purchase the set then the unit does not train.

By making plans to purchase NLWs, such as ADS or PHaSR, and adding them to the Infantry Table of Organization and Equipment, and by including NLWs munitions to annual

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<sup>17</sup> Aycock, Lieutenant Commander Cabot (Educations Officer, Joint Non-lethal Weapons Directorate). Personal Interview. 26 September 2006.

ammunition allocations Infantry units will be able to incorporate NLW training for COIN into their annual training plans. Once purchased, directed energy weapons will need to become personal weapons that are spread as desired throughout the squad. This will ensure that the Marine carrying the weapon is proficient and familiar with effects of the weapons including second order effects. One distribution possibility would be to arm each fire team leader with a PHaSR and arm the squad leader with a “stun gun”. The rationale behind this possibility is that proper employment of these weapons systems will take mature leaders that are capable of understanding complicated ROE and understanding second order effects of the weapon system. The rest of the squad will still be armed with Squad Automatic Weapons, service rifles, and M203 grenade launchers or future variants of these weapons systems. This force structure will enable the infantry squad, platoon, company, and battalion to fully integrate NLWs with lethal weapons in order to provide a graduated response to a situation based upon the use of the minimum force and perception of threat. It is critical that in whatever fielding plan is chosen, that fielding occurs after the development of doctrine and training methodologies vice fielding a new NLW and then developing doctrine and training methodologies.

### **Scenario and Summary**

A possible scenario to summarize the recommended changes to doctrine, training, and equipment needed to successfully employ NLWs against modern insurgents follows:

Battalion “X” is preparing for a future deployment to country “Z” where the current government is believed to be battling the infant stages of a modern insurgency. The battalion is arrayed with PHaSRs and stun guns with a kill capability in the same manner as suggested in the previous paragraph, as well as their conventional weapons. Using the ITSs embedded in the new Infantry T&R Manual, individual Marines are trained to standard on their personal weapon to include the squad and fire team leaders training with their PHaSRs and stun guns.

The battalion then goes through T&R training events that integrate NLW and lethal weapon employment in a COIN environment along with other T&R training events that prepare them for the mission. Next, Battalion X deploys to 29 Palms to execute Mojave Viper, which is an exercise that provides real life training scenarios in SASO, COIN, and conventional combined arms exercises. The battalion goes through real life scenarios that they could encounter during their upcoming employment allowing them to validate the T&R training executed at their home

station. The scenarios allow them to employ the PHaSR and stun guns against actual actors that allow the squad leader and fire team leaders to think through application of ROE and also observe the actual effects of their NLWs. After a successful exercise, the battalion redeploys back to its home station and prepares for deployment to country “Z”.

The battalion arrives in country “Z” and prepares to conduct COIN against the insurgency. The battalion commander receives his orders. He reviews the ROE comparing them to his knowledge of current doctrine on considerations for employment of NLWs in COIN. He fills in any gaps not covered in the issued ROE within his own order. As his battalion patrols their Area of Operations, one squad encounters a crowd of people in a local town that seem to be conducting a riot that involves looting and violence. The squad leader and fire team leaders using their experience from Mojave Viper determine that two individuals in the center of the crowd are the leaders of the riot. The fire team leaders employ their PHaSRs to separate the crowd from the two leaders. Not knowing why their skin feels like it is being burnt, the crowd runs in the direction that the fire team leaders desire due to proper employment of their PHaSRs. Simultaneously, the squad leader stuns the two suspected leaders. Immediately, the rest of the squad is employed to secure the two suspected riot leaders.

While the squad deals with newly acquired detainees, they receive shots from a sniper on rooftop across the street. One fire team leader employs his PHaSR in vicinity of the sniper to keep him from staying in his current position. The sniper is unsure what is happening to his skin, but every time he tries to assume his firing position his skin feels like it is burning. At the same time another squad member gets into a position where he can see the sniper and in accordance with ROE kills the sniper with his service rifle. Intelligence later determines that the 2 detainees and the sniper are part of a local insurgent cell that was operating independently within the town. No members of the crowd were injured and there was no damage to infrastructure.

Although this scenario is fabricated, it paints a picture of an infantry battalion that used doctrine, training standards, and organic weapon systems to deal with a civil disturbance and an insurgent in accordance with ROE while conducting COIN in an urban environment. The battalion employed a building block training approach using ITSs, T&R exercise, and culminating with Mojave Viper to ensure that its Marines understood direct, second, and third order effects of NLWs and how to integrate non-lethal force with lethal force.

While future operations will not be limited to COIN, there will always be a need to maintain some type of proficiency in COIN operations. Modern insurgents’ operational art includes employing diffuse, cell-based structures and leaderless resistance while operating in urban terrain using global communications. These insurgencies provide complex problems that will require commanders to have a wide variety of tools available in order to conduct successful

COIN.<sup>18</sup> NLWs are a necessary tool for fighting modern insurgents while simultaneously ensuring the safety of noncombatants and minimizing damage to local infrastructure. By integrating the proper doctrine, training standards and equipment, the USMC can move toward the confident employment of NLWs as an alternative response to the changing face of modern conflict.

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<sup>18</sup> British Army. *Army Field Manual, Vol I Combined Arms Operations, Part 10 "Counter Insurgency Operations (Strategic and Operational Guidelines)*. July 2001. C-8-C-1 – C-8-C-4.

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